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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/582,926 | 05/15/2007 | Xaver Laufenberg | 10191/4796 | 9212 |

26646 7590 05/25/2010

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| EXAMINER | |
|---|---|
| CUEVAS, PEDRO J | |
| ART UNIT | PAPER NUMBER |
| 2839 | |
| MAIL DATE | DELIVERY MODE |
| 05/25/2010 | PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/582,926 | LAUFENBERG ET AL. | |
| | Examiner | Art Unit | |
| | PEDRO J. CUEVAS | 2839 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *23 April 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *16-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *16-38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 November 2009* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 23, 2010 has been entered.

### *Response to Arguments*

2. Applicant's arguments, see pages 7-11, filed on April 23, 2010, with respect to the drawing objections and the 35 U.S.C. § 112 rejections have been fully considered and are persuasive. The drawing objections and the 35 U.S.C. § 112 rejection(s) of claims 16-34 have been withdrawn.

3. Applicant's arguments, see pages 11-13, filed on April 23, 2010, with respect to the rejection(s) of claim(s) 16-34 under 35 U.S.C. § 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of EP 1 111 753 A1 to Koji et al. and U.S. Patent application Publication No. 2003/107351 to Taniguchi et al.

### *Drawings*

4. The drawings were received on November 16, 2009. These drawings are acceptable.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 16-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 1 111 753 A1 to Koji et al. in view of U.S. Patent application Publication No. 2003/107351 to Taniguchi et al.

Koji et al. disclose the construction of a control device for vehicular AC generator comprising a controller (4) configured to control a voltage of the generator, and "*refers to a voltage controller including a control circuit having operational amplifiers or a microcomputer with programs, and a feedback control system that provides output according to a difference between a control voltage and a battery voltage*" (as pointed out by the applicant's representative in page 9 of the REMARKS filed on April 23, 2010).

However, it fails to disclose a controller configured to control a torque of the generator.

Taniguchi et al. disclose the construction of an automotive alternator working to minimize change in inertia torque to the rotor, comprising a controller (6) configured to control a torque of the generator, and "*refers to an inertia torque reducing control circuit including a switch to control the supply of an exciting current and a speed determining circuit to determine whether a speed of the internal combustion engine is lower than a speed reference value*" (as pointed out by the applicant's representative in page 9 of the REMARKS filed on April 23, 2010).

It would have been obvious to one skilled in the art at the time the invention was made to combine and electronically implement the controller configuration disclosed by Taniguchi et al. with the controller configuration disclosed by Koji et al. in any electronic controller or microprocessor known in the art, for the purpose of providing a controller having both, a voltage control (that protects the generator coils and the load from damaging electrical operating

conditions) and a torque control (that protects the engine internals and mechanical power transmission devices from damaging mechanical operating conditions) capability, since "*These examples make clear that the details of using a controller to effect torque and voltage control were available at the time.*" (as pointed out by the applicant's representative in page 9 of the REMARKS filed on April 23, 2010), an as such, one with ordinary skill in the art .

It would have been obvious to one with ordinary skill in the art at the time the invention was made to configure a controller to control a voltage of the generator by outputting a control signal to the generator in response to changes in the generator voltage, wherein the controller provides a first area of operation based on the value of the generator voltage, in which a voltage control is performed to regulate the generator voltage, to the exclusion of performing a torque control to regulate a braking torque exerted by the generator, and at least one second area of operation based on the value of the generator voltage, in which the torque control is performed, to the exclusion of performing the voltage control, the controller transitioning from the first area to the at least one second area when the generator voltage goes beyond one of a first upper threshold value and a first lower threshold value, the first upper threshold value and the first lower threshold value being defined by a boundary of the first area; wherein the generator is coupled to an engine to generate electrical power.

In other words, one skilled in the art at the time the invention was made could have combined the teachings of Koji et al. and Taniguchi et al. in such a way, any possible way, that the resulting operational behavior of the controller would define areas of operation according to

the parameters of the device being controlled. It would also have been obvious to one with ordinary skill in the art at the time the invention was made to graphically arrange said operational parameters in such a way so as to define the resulting "areas of operation" recited in the claims.

9. With regards to claim 16-24, 31-34 and 37-38, it should be emphasized that "apparatus claims must be structurally distinguishable from the prior art." MPEP 2114. It must be noted that the only structural components present in claims 16-24, 31-34 and 37-38 are the generator, the controller and the engine, which are all disclosed by both applied references. *In re Danly*, 263 F. 2d 844, 847, 120 USPQ 528, 531 (CCPA 1959), it was held that apparatus claims must be distinguished from prior art in terms of structure rather than function. The structure recited in the claims (generator, the controller and the engine) has not been shown to be different in any way from the structure of the applied prior art. In *Hewlett-Packard Co. v Bausch & Lomb Inc.*, 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990), the court held that: "Apparatus claims cover what a device is, not what it does" (emphases in original). To emphasize the point further, the court added: "An invention need not operate differently than the prior art to be patentable, but need only be different" (emphases in original). How is the claimed invention different from the prior art of record has not been clearly disclosed.

10. With regards to claims 17, 31, 37 and 38, it would have been obvious to one with ordinary skill in the art at the time the invention was made to define at least one of:

a) a transition between the first area and the at least one second area, and

b) a width of the first area and the at least one second area;

according to the value of at least one operating parameter of the electrical device that influences one of the torque and the generator voltage.

11. With regards to claim 18 and 31, it would have been obvious to one with ordinary skill in the art at the time the invention was made to extend the value of the first upper threshold and the first lower threshold from a setpoint voltage lying between the first upper threshold value and the first lower threshold value.

12. With regards to claim 19, it would have been obvious to one with ordinary skill in the art at the time the invention was made to define the first area as a function of a maximum allowable change in torque.

13. With regards to claims 20, 32, 33 and 34, it would have been obvious to one with ordinary skill in the art at the time the invention was made to provide two second areas for the torque control, and to extend the two second areas on both sides of the first area for the voltage control.

14. With regards to claims 21, 32, 33 and 34, it would have been obvious to one with ordinary skill in the art at the time the invention was made to define two voltage boundary values from a voltage range within which the at least one second area for the torque control lies.

15. With regards to claims 22 and 32, it would have been obvious to one with ordinary skill in the art at the time the invention was made to control a torque variable to vary linearly in the at least one second area for the torque control.

16. With regards to claims 23 and 33, it would have been obvious to one with ordinary skill in the art at the time the invention was made to control a torque-influencing variable as a

function of time and the at least one operating parameter of the electrical device in the at least one second area for the torque control.

17. With regards to claims 24 and 34, it would have been obvious to one with ordinary skill in the art at the time the invention was made to control a torque-influencing variable according to a functional relationship defined in a characteristics map in the at least one second area for the torque control.

18. With regards to claim 25, it would also have been obvious to one with ordinary skill in the art at the time the invention was made to design method for controlling the operation of a generator in connection with a vehicle electrical system of a motor vehicle as disclosed above, by using any known computer program or electronic circuit architecture know to one with ordinary skill in the art, said method comprising the steps of:

recording a voltage of the generator, which is coupled to an engine to generate electrical power;

determining whether the recorded voltage lies in a specified range from a setpoint voltage;

performing a voltage control according to any set of predetermined operational conditions;

performing the torque control according to any set of predetermined operational conditions; and

specifying a highest priority for the voltage control, if the recorded voltage lies outside the predetermined range defined by the voltage boundary values.

19. With regards to claim 26, it would have been obvious to one with ordinary skill in the art at the time the invention was made to control the torque to vary linearly.

20. With regards to claim 27, it would have been obvious to one with ordinary skill in the art at the time the invention was made to change the torque as a function of time and a specified operating parameter of an electrical device that includes the generator and a controller, wherein a value the specified operating parameter influences the torque.

21. With regards to claim 28, it would have been obvious to one with ordinary skill in the art at the time the invention was made to change the torque according to any functional relationship defined in a characteristics map.

22. With regards to claims 29, 35 and 36, it would have been obvious to one with ordinary skill in the art at the time the invention was made to predetermine at least one of:

a) a width of the first area and a width of the at least one second area, and

b) a width of a transition area between the first area and the at least one second area.

23. With regards to claim 30, it would have been obvious to one with ordinary skill in the art at the time the invention was made to adjust at least one of:

a) a width of the first area and a width of the at least one second area, and

b) a width of a transition area between the first area and the at least one second area;

according to operating parameters of an electrical device that includes the generator and a controller, during a driving operation of the motor vehicle equipped with the electrical device, wherein the operating parameters influence one of the generator voltage and the torque.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PEDRO J. CUEVAS whose telephone number is (571)272-2021. The examiner can normally be reached on M-F from 9:00 - 6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, T. C. Patel can be reached on (571) 272-2098. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Pedro J. Cuevas/
Examiner, Art Unit 2839
May 25, 2010